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ABSTRACT

This longitudinal study examined the development of expertise as a situational and contextual process among nine student teachers during their 3-year enrollment in a kindergarten training college in Finland. The research report is based on observations of student teaching, interviews with the student teachers, and student teacher diaries. Utilizing a situated learning framework, the data indicate that the social elements of the student teachers' training, such as personal interaction, shared attitudes toward children, and previous educational experience were more determinant of the student teachers' expertise development than physical elements of the training, such as the class schedules, classrooms, and organization of the course of study. The study concludes by arguing that teacher education needs to pay much more attention to the situational aspects of learning. (Contains 17 references.) (MDM)

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Abstract

This paper discusses a study investigating the development process of expertise in the domain of early childhood education. The purpose of the study was to examine the development of expertise as a situational and contextual process in which the learning environment forms the arena and a "partner" for individual learning. The framework is mainly based on the theories and studies of situated learning. The overall method was based on the grounded theory approach (Glaser & Strauss 1967; Strauss & Corbin 1991). The analyses were made qualitatively and followed the above method.

Introduction

Learning has often been studied as an individualistic phenomenon. For example, the traditional approach of expertise research has described the development of expertise almost solely as the development of a person's abilities or aptitudes. The studies have shown that experts have a much larger and more structured knowledge base than novices from which to draw solutions, for instance, in playing chess, interpreting x-rays, analyzing computer programs, or teaching (e.g. Berliner 1992, Chase & Simon 1973, de Groot 1965, Leinhardt & Greeno 1986, Lesgold et al. 1988, Soloway et al. 1988). The qualitative differences between expert and novice performance have interpreted to be closely related to the structure and quality of expert and novice knowledge (Glaser 1992).

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A more recent approach in the study of learning describes it as an interactional process. Learning is seen to take place in the participation framework, between the person and his/her environment, not in the individual mind (e.g. Lave & Wenger 1991). Theories emphasising the role of interaction in learning originate from the sosio-cultural theories of learning (Vygotsky 1978). According to this theoretical perspective, learning is socially and culturally embedded (Rogoff 1990; Wertsch 1991). So, learning and thinking are social constructions. What is mediated in a learning interaction is not only the content of learning, but the processes of learning as well. (McGuinness 1993, 312)

Despite the recently stress of the significance of the environment, there still are needed more excact studies concerning the essence of social and the mediated influence of the situational aspects of environment.

Not much empirical research seems to be available on the interplay between the person and the context in the learning process. On the basis of my earlier study (Karila & Ropo 1994) I believe that the dynamic interaction between persons´ expectations and the culture of the environment is a significant factor in the learning process. Active interaction with the environment is particularly important when a person's conceptions and knowledge structures are in the process of major qualitative change. The nature of interaction between a person and the environment is related to the direction and the speed of development in expertise.

So, the purpose of the study was to examine the construction and the development of expertise as a situational and contextual process in which the learning environment forms the arena and a "partner" for individual learning and development. I am specifically interested in the interactional processes that mediate the situational aspects to the characteristics of expertise.

Methods

The subjects (n=9) of the study were student teachers in a kindergarten teacher training college. The data were gathered 1991-1994 at which time the kindergarten teacher education had independent institutional status as a college. Nowadays, the education is located at the university in the department of teacher education. All the students were female students. I

followed their development for three academic years. The data consist of both individual and the data of the environment. The individual data were gathered using four different methods, namely, observations and video recordings of the subjects' instructional sessions during their practice periods in the kindergartens, interviews with the students before and after the instructional sessions, and interviews with the students several times during their education at the college. All the interviews were tape recorded and transcribed for analysis. The student teachers also kept diaries during the practice periods. The data concerning the environment consist of the written documents (laws, curricula, schedules of learning etc.), of the evaluations written by the supervisors and of interviews with the supervisors as well with the students, and observation of physical environment.

The overall method was based on the grounded theory approach (Glaser & Strauss 1967; Strauss & Corbin 1991). A grounded theory is one that is inductively derived from the study of the phenomenon it represents (Strauss & Corbin 1990, 23). The analyses were made qualitatively and followed the above method. Since very little earlier empirical research was available, the analysis focused on formulating inductive theories of the research problem.

Results

According to the study the development process of expertise during teacher education can be descibed as a continuity of situational learning experiences. The situational experiences are constructed in the interaction process between the learner and her/his learning environment, especially in the interaction with the social and physical elements of the environment. In my study the interaction with other persons, the conceptions, shared agreements concerning the children, the early education, the practices etc. are interpreted as social elements of the environment, with the schedules, the rooms, different kinds of organizations, different kinds of groups etc. interpreted as physical elements of the environment. The data show that the social elements are more determinant than the physical elements. Futhermore, the sense of the physical elements can be understood by means of the social elements. The situational learning experiences form some kind of path for the development process. The data show that the development of the path is

related to the properties of the interaction partners as well as to the nature of the interaction. The nature and the development of the path seemed to be significant for the quality and content of learning

The environment

The overall organization of learning

The learning environment of the students consisted of both the world of work (the training kindergartens) and of the world of school (the college). This kind of arrangement offered the students possibilities to consider the important issues of early education in two different settings.

The progress of the studies was based on the alternation of these two world. The student teachers practiced in the training kindergarten four times during their education. The duration of each period was about five weeks. The training kindergartens were ordinary public kindergartens and the supervisors were ordinary kindergarten teachers.

The differences between the two parts of the environment

The two parts of the environment differered from each other. The differences were related both to the nature of the activity (work/learning) and to the conceptions of early education.

The differences concerning the nature of the activity were clearly apparent during the last practice period of the student teachers. The student teachers felt that most of their supervisors in the kindergartens expected the students to be allready "graduated". The student teachers themselves as well as their supervisors from the college discerned the last training period clearly as a learning situation. The difference between the conceptions can be understood on the basis of the earlier tradition of kindergarten teacher training. Many of the supervisors in the kindergartens had obtained their education at such a time when teacher training was assumed to give the expertise; the work after the basic education was simply understood as application of the knowledge the kindergarten teachers already possessed. In the local tradition of kindergarten teacher training this kind of conception can be evaluated as having had quite a strong influence. Lately, the ideas of life long learning has been more emphasized in the college among the teachers.

Most of the college supervisors were interested in developing new ways to discern the profession of the kindergarten teacher, with many of them emphasizing the "teachers as researchers" -approach. This kind of approach seemed to be quite strange to the supervisors in the kindergartens perhaps partly due to the tradition described in the above section. The college environment (college teachers) also seemed to be more eager to develop new kindergarten practices, especially from the point of view of child centered early education. This kind of approach seemed to create interest also in kindergartens, but only a few of them carry out this kind of educational practice.

Due to these differences the practice periods contained many kinds of contradictions. Consequently, the learning environment consisted of various interpretations of the children, early education, professional practice in the kindergarten, development of expertise in the kindergarten etc. These various interpretations were specially expressed in the interaction between students and their supervisors.

Both parts of the environments were heterogenous. In addition, the culture (conceptions of education and educational practices based on the conceptions) of the parts seemed to be in the process of change.

Anyhow, the alternation of the two world (the school and the work) offered the students possibilities to interact with both parts of the environment , especially with various interpretations of early childhood education and work processes of kindergarten teachers at the same time.

Training kindergartens

The rooms and the furnishing in the training kindergartens were quite similar. This is easy understood because most of the kindergartens in Finland were build after the year 1973 (the Day Care Law) at which time the construction of the kindergartens and other public buildings were regulated by the central administration. Also, the size of child groups and the amount and the educational level of the staff in each group was regulated.

The educational practices of the students´ training kindergartens seemed to be in a process of change. One of the most obvious properties of the change was the transition from adult centered professional practices towards child centered professional practices. The supervisors differed from each other in whether they emphasized the child centered or the teacher centered pedagogical practice

Despite the external similarity of the rooms, the groups and the staff they seemed to form quite a dissimilar learning environment for the student teachers. The data reveals that the signifigance of the physical settings are closely related to the pedagogical and working culture and, at a concrete level to the educational practices of the training kindergartens. For example, at the college (among the college teachers) the idea of child centered early education was interpreted in that instruction should usually be organized in small groups (2-10 children) of children. This also was the precept the students tried to follow. At the kindergartens there were a lot of variations in the ways of organizing the activities of the children. For example, some of the kindergartens stressed the right of every child to be provided equal opportunities and experiences during the kindergarten day. In this kind of educational culture the student teachers were not allowed to organize different kinds of activities for the children, but they were expected to organize the same activities many times per day if they necessarily wanted to work with the small groups. It did not matter if the activities were not suitable for every child.

.There were also variation in the supervision conceptions and practices. The student teachers experiences of the supervisors can be classified into three categories: an older teacher who learns together with a student, an "expert" who evaluates what is wrong and what is right, and a worker who carries out the obligation belonging to the job. In this stage of the analysis it can be assumed that the supervisors own experiences during teacher education, the nature of their expertise, and the nature of their working environment are related to the ways in which they work as supervisors.

The student teachers position at the training kindergarten also was related to the working culture of the kindergarten. For example, in some kindergartens the students were not allowed to participate in the educational meetings of the staff. Their position was strongly marginal.

On the basis of the data the social and physical elements of the environment were closely related to each other. With both of them

appearing in the educational practices the student teachers were involved in. Tyre and Hippel (1993, 2) have emphasized the significance of the physical settings. They have stated that learning is *situated* in the sense that *where* learning take place (and not just who is talking to whom) matters. The data of my study confirm their conception. Even if it sometimes is very difficult to separate the social and physical elements of the environment, I believe that even the attempt to do so provides more information concerning the learning process and the interaction between the person and the environment.

The students

The students´ earlier experiences concerning the children, education and the life at the kindergarten formed the base of their developing properties.

The earlier experiences especially seemed to reflect the expectations and orientations of the students. The students were carrying their earlier experiences with them and they were bringing them also to the interactional situation they were involved in.

There were variations in the student teachers´ orientation towards the environment The various orientations were classified into two categories: a person who seeks support from the learning environment or a self directed person who is active in the interaction with the environment.

The students´ conceptions of early education were also found to be varied. The transition process of the conceptions seemed to be a very complicated combination of the earlier experiences and conceptions and the situated learning experiences.

The various interactional processes

As described above the culture of the learning environment was in process of change. So, many contradictions appeared inside and between the two worlds of the environment. This situation formed the broader frame for the interactional processes between the student teachers and the environment.

The students´ interactional processes differed from each other.
Part of the differences in the interaction was related to the properties of

the environment, namely the various educational and working cultures of the training kindergartens and the various properties of the supervisors.

Part of the differences was related to the properties of the students, especially to their own orientation towards the environment and the interaction. The student´s ability to link the experiences she had obtained from different environments and situations seemed to be essential from the point of view of learning. Especially important seemed to be how the student managed to construct an own view on the basis of the different culture of the environment and how she was able to cooperate between the two parts of the environment. Thus, it seems evident that the social and physical elements do not dominate learning but merely provide some kind of frame - limitations or possibilities - for learning. It is significant how learners interact with their environment and how they are able to use the environment as a learning resource.

In my data one example of the interaction was the student teachers learning processes concerning child centered early education. These interactional processes are described in my paper presented at the EARLI conference in Nijmegen (Karila 1995).

The various interactional processes seemed to form various contexts for the students´ learning processes. It seems evident that the properties of the partners in the interaction work as some kinds of direction signs for the learning path.

On the basis of the analysis three main learning path were found:
* the transition from teacher centered professional practice towards child centered professional practice
* the transition from practical work towards theoretical work
* the attempt to keep up the schedule the context imposes on the students´ learning.

Conclusions

On the basis of the data the development of expertise is clearly a situational process. The actual discourse at any one time seem to form the broader frame for the development process. At the time the data were gathered the key topics of the early education discussion in Finland were the "child centered" -approach and the "teacher as researcher" -approach.

The first topic was actualized both at the training kindergartens and at the kindergarten teacher colleges. The second mainly appeared at the colleges.

The development of expertise during teacher education seem to be just the beginning of the development process. The student teachers´ position in the training kindergarten seem to be more or less marginal and their opportunities to develop their expertise related to the educational and working culture of the training kindergarten.

As stated earlier the culture of the kindergarten as such did not seem to dominate the learning possibilies of the student. Instead the nature of the interaction between the student and the kindergarten environment seemed to be more significant.

Because of the differences and transition processes the most obvious properties of the environment in general were instability and transition. Learning in this kind of context seemed to demand very active orientation towards the environment of the student teacher.

It seems to me that in future teacher education has to pay much more attention to the situational aspects of learning. This kind of attention may reveal the real problems the student teachers have in their learning processes.

The main purpose of the study was to clarify the nature of the learning processes in the development of expertise. Although the analysis is ongoing it seems evident that the study reveals important aspects of the nature of situated learning in expertise. I hope these findings can be applied in developing both theories of expert development and practical solutions for teacher pre-service and in-service education.

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